ST. JOSEPH'S COLLEGE, DEVAGIRI, CALICUT
(AUTONOMOUS)

UNDER GRADUATE DEGREE PROGRAMME

ST. JOSEPH'S CHOICE BASED CREDIT SEMESTER SYSTEM
(SJCBCSSUG)

BACHELOR OF SCIENCE IN
BOTANY
(CORE, OPEN & COMPLEMENTARY COURSES)

Course Outcome
(2019Admn Onwards)

COURSE OUTCOMES – CORE COURSES

SEMESTER I

GBOT1B01T – ANGIOSPERM ANATOMY & MICRO TECHNIQUE

Contact Hours per Week: **4**
Number of Credits: **3**
Number of Contact Hours: **72 Hrs (36T+36P)**
Course Evaluation: **75 (Internal 15 & External 60)**

COs	COURSE OUTCOMES
CO1	Demonstrate the ability to differentiate plant organs by observing anatomical features.
CO2	Understand the non-living inclusions of plants and their significance
CO3	Differentiate tissues and their functions
CO4	Illustrate primary and secondary (normal and anomalous) structures of plant organs.
CO5	Explain various developmental details of angiosperms.
CO5	Realize the significance and applications of micro technique

SEMESTER II

GBOT2B02T – MICROBIOLOGY, MYCOLOGY, LICHENOLOGY & PLANT PATHOLOGY

Contact Hours per Week: **4**
Number of Credits: **3**
Number of Contact Hours: **72 Hrs (36T+36P)**
Course Evaluation: **75 (Internal 15 & External 60)**

COs	COURSE OUTCOMES
CO1	Understand basics of microbial life and their economic importance.
CO2	Develop general awareness on the diversity of microorganisms, fungi and lichens.
CO3	Analyse the ecological role played by bacteria, fungi and lichens
CO4	Identify plant diseases and find out control measures.
CO5	Realize the significance of plant diseases as far as crop production is concerned.

SEMESTER III

GBOT3B03T – PHYCOLOGY, BRYOLOGY, PTERIDOLOGY & GYMNOSPERMS

Contact Hours per Week: 5
Number of Credits: 3
Number of Contact Hours: 90 Hrs (54T+36P)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	Appreciate the diversity and evolutionary significance of lower plant groups.
CO2	Classify algae, bryophytes and pteridophytes
CO3	Understand the economic and ecological importance of lower plant groups.
CO4	Understand the role of gymnosperms as a connecting link between pteridophytes and angiosperms

SEMESTER IV

GBOT4B04T – RESEARCH METHODOLOGY, REPRODUCTIVE BOTANY & PALYNOLOGY

Contact Hours per Week: 5
Number of Credits: 3
Number of Contact Hours: 90 Hrs (54T+36P)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	Develop scientific temper
CO2	Undertake scientific projects and prepare project reports
CO3	Analyse statistical data and derive conclusions
CO4	Prepare permanent slides, applying the histochemical techniques
CO5	Explain various developmental details of angiosperms.
CO6	Realize the significance and applications of palynology.

SEMESTER V

GBOT5B06T – CELL BIOLOGY, PALAEOBOTANY, PHYTOGEOGRAPHY & EVOLUTION

Contact Hours per Week: 5
Number of Credits: 3
Number of Contact Hours: 90 Hrs (54T+36P)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	Appreciate the ultra-structure of a plant cell.
CO2	Enumerate the functions of each cell organelle.
CO3	Appreciate the process of organic evolution.
CO4	Realize the importance of fossil study.
CO5	Understand the climatic conditions of the past and realize the changes happened
CO6	Recognize the phytogeography zones of India.

SEMESTER V

GBOT5B07T – ANGIOSPERM MORPHOLOGY& SYSTEMATICS

Contact Hours per Week: 5
Number of Credits: 3
Number of Contact Hours: 90 Hrs (54T+36P)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	Appreciate the diverse morphology of angiosperms.
CO2	Identify and classify plants based on taxonomic principles.
CO3	Make scientific illustrations of vegetative and reproductive structures of plants.
CO4	Develop the skill of scientific imaging of plants.
CO5	Realize the importance of field study.
CO6	Change their attitude towards over exploitation of rare/endemic plants.

SEMESTER V

GBOT5B08T – TISSUE CULTURE, HORTICULTURE, ECONOMIC BOTANY &ETHNOBOTANY

Contact Hours per Week: 5
Number of Credits: 3
Number of Contact Hours: 90 Hrs (54T+36P)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	Critically evaluate the advantages of tissue culture and horticulture over conventional methods of propagation.
CO2	Apply various horticultural practices in the field.
CO3	Experiment on the subject and try to become entrepreneurs.
CO4	Identify the economically important plants.

SEMESTER V

GBOT5B09T – PLANT PHYSIOLOGY

Contact Hours per Week: 5
Number of Credits: 3
Number of Contact Hours: 90 Hrs (54T+36P)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	Identify the physiological responses of plants.
CO2	Analyse the role of external factors in controlling the physiology of plants.

SEMESTER VI

GBOT6B10T – GENETICS & PLANTBREEDING

Contact Hours per Week: 5
Number of Credits: 3
Number of Contact Hours: 90 Hrs (54T+36P)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	Appreciate the facts behind heredity and variations.

CO2	Understand the basic principles of inheritance.
CO3	Solve problems related to classical genetics.
CO4	Predict the pattern of inheritance.
CO5	Understand various plant breeding techniques.
CO6	Realize the role of plant breeding in increasing crop productivity.

SEMESTER VI
GBOT6B11T – BIOTECHNOLOGY, MOLECULAR BIOLOGY & BIOINFORMATICS

Contact Hours per Week: **5**
Number of Credits: **3**
Number of Contact Hours: **90 Hrs (54T+36P)**
Course Evaluation: **75 (Internal 15 & External 60)**

COs	COURSE OUTCOMES
CO1	Analyse the role of biotechnology in daily life.
CO2	Understand the basic aspects of bioinformatics.
CO3	Explain the concepts in molecular biology.

SEMESTER VI
GBOT6B12T – PLANT BIOCHEMISTRY

Contact Hours per Week: **5**
Number of Credits: **3**
Number of Contact Hours: **90 Hrs (54T+36P)**
Course Evaluation: **75 (Internal 15 & External 60)**

COs	COURSE OUTCOMES
CO1	Draw and explain the structure of biomolecules.
CO2	Explain the metabolic processes taking place in each cell.
CO3	Appreciate the energy fixing and energy releasing processes taking place in cells.

SEMESTER VI

GBOT6B13T – ENVIRONMENTAL SCIENCE

Contact Hours per Week: 5
Number of Credits: 3
Number of Contact Hours: 90 Hrs (54T+36P)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	Realize the importance of ecological studies.
CO2	Develop environmental concern in all their actions and practise Reduce, Reuse and Recycle.
CO3	Try to reduce pollution and environmental hazards and change their attitude towards throwing away plastic wastes.
CO4	Spread awareness of the need of conservation of biodiversity and natural resources.
CO5	Analyse the reasons for climate change and find out ways to combat it.

ELECTIVE

SEMESTER VI

GBOT6E01T–GENETIC ENGINEERING

Contact Hours per Week: 5
Number of Credits: 3
Number of Contact Hours: 90 Hrs (54T+36P)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	Appreciate various techniques employed in genetic engineering.
CO2	Develop general awareness on genetically modified organisms.
CO3	Understand the ethical, social and legal issues associated with genetic engineering.

ELECTIVE

SEMESTER VI

GBOT6E02T –ADVANCES IN CROP IMPROVEMENT

Contact Hours per Week: 5
Number of Credits: 3
Number of Contact Hours: 90 Hrs (54T+36P)
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	Develop deep knowledge in angiosperm systematics.
CO2	Demonstrate ability to identify and classify plants in a faster and better way.

CO3	Apply imaging technologies in plant systematics.

ELECTIVE

SEMESTER VI

GBOT6E03T –ADVANCED ANGIOSPERM SYSTEMATICS

Contact Hours per Week: **5**
Number of Credits: **3**
Number of Contact Hours: **90 Hrs (54T+36P)**
Course Evaluation: **75 (Internal 15 & External 60)**

COs	COURSE OUTCOMES
CO1	Understand various techniques employed for increasing crop productivity.
CO2	Identify diseases affecting crop plants.
CO3	Attain general awareness on various crop research stations of the country.

COURSE OUTCOMES – COMPLIMENTARY COURSES

SEMESTER I

GBOT1C01T– ANGIOSPERM ANATOMY AND MICRO TECHNIQUE

Contact Hours per Week: **4**
Number of Credits: **2**
Number of Contact Hours: **72 Hrs (36T+36P)**
Course Evaluation: **75 (Internal 15 & External 60)**

COs	COURSE OUTCOMES
CO1	Explain the types, structure and functions of plant tissues
CO2	Explain primary and secondary (normal and anomalous) structures of plant organs.
CO3	Identify plant organs by observing anatomical features.
CO4	Illustrate primary and secondary (normal and anomalous) structures of plant organs.
CO5	Apply the histochemical techniques in laboratory works

SEMESTER II

GBOT2C02T– CRYPTOGAMS, GYMNOSPERMS & PLANT PATHOLOGY

Contact Hours per Week: **4**
Number of Credits: **2**
Number of Contact Hours: **72 Hrs (36T+36P)**
Course Evaluation: **75 (Internal 15 & External 60)**

COs	COURSE OUTCOMES
CO1	Analyse the role of the lower plants in the process of evolution.
CO2	Explain the ecological significance of lower plants
CO3	Identify plant diseases and take remedial measures to control them.

SEMESTER III

GBOT3C03T– MORPHOLOGY, SYSTEMATIC BOTANY, ECONOMIC BOTANY, PLANT BREEDING & HORTICULTURE

Contact Hours per Week: **5**
Number of Credits: **2**
Number of Contact Hours: **90 Hrs (54T+36P)**
Course Evaluation: **75 (Internal 15 & External 60)**

COs	COURSE OUTCOMES
CO1	Appreciate the diverse morphology of angiosperms.
CO2	Identify and classify plants based on taxonomic principles
CO3	Make scientific illustrations of vegetative and reproductive structures of plants
CO4	Identify the economically important plants
CO5	Understand the basic principles of plant breeding
CO6	Apply various horticultural practices in the field.

SEMESTER IV

GBOT4C04T– PLANT PHYSIOLOGY, ECOLOGY AND GENETICS

Contact Hours per Week: **5**
Number of Credits: **2**
Number of Contact Hours: **90 Hrs (54T+36P)**
Course Evaluation: **75 (Internal 15 & External 60)**

COs	COURSE OUTCOMES
CO1	Explain the physiological processes in plants.
CO2	Understand the basic principles of heredity and variation.
CO3	Realize the importance of ecology.
CO4	Spread awareness of the necessity of conservation of biodiversity and natural resources
CO5	Solve problems related to classical genetics

COURSE OUTCOMES – OPEN COURSES

SEMESTER V

GBOT5D01T– GENERAL BOTANY

Contact Hours per Week: **3**
Number of Credits: **3**
Number of Contact Hours: **54 Hrs**
Course Evaluation: **75 (Internal 15 & External 60)**

COs	COURSE OUTCOMES
CO1	Have a general awareness on various branches of plant science
CO2	Develop environmental concern in all their activities.
CO3	Realize the importance of plants in everyday life.

SEMESTER V

GBOT5D02T– APPLIED BOTANY

Contact Hours per Week: 3
Number of Credits: 3
Number of Contact Hours: 54 Hrs
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	Develop general awareness on applied aspects of Plant science
CO2	Realize the role of plants in everyday life.
CO3	Apply vegetative propagation methods in everyday life.
CO4	Realize the economic importance of plants

SEMESTER V

GBOT5D03T – BASIC TISSUE CULTURE

Contact Hours per Week: 3
Number of Credits: 3
Number of Contact Hours: 54 Hrs
Course Evaluation: 75 (Internal 15 & External 60)

COs	COURSE OUTCOMES
CO1	Understand plant tissue culture as a rapid propagation method.
CO2	Explain the steps involved in tissue culture.
CO3	Realize the applications of plant tissue culture